

Customer No.: 31561  
Application No.: 10/709,953  
Docket No.: 10546-US-PA

## **REMARKS**

### **Present Status of the Application**

It is noted with great appreciation that the Office Action considers claims 9-10, 17-18 as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Office Action, however, has rejected claims 1-3, 8-12, and 16-20. Specifically, claims 1-3 are rejected under 35 U.S.C. 102(e) as being unpatentable over Seto et al. (U. S. Patent 6,977,403, hereinafter Seto). Claims 8, 11-12, 16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seto.

Currently, claims 1-3, 8-12, and 16-20 remaining pending in the application. After carefully considering the remarks set forth in this Office Action and the cited references, Applicants respectfully submitted that the presently pending claims are already in condition for allowance. Reconsideration and withdrawal of the Examiner's rejection are requested.

### **Discussion of Claim Rejections under 35 USC § 102 & 103**

*Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Seto.*

*Claims 8, 11-12, 16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seto.*

Applicants respectfully traverse the rejections for at least the reasons set forth below.

It is well established that anticipation under 35 U.S.C. § 102 requires each and every elements of the rejected claims must be disclosed exactly by a single prior art reference. The now-pending independent claim 1 is allowable for at least the reason that Seto fails to teach or

Customer No.: 31561  
Application No.: 10/709,953  
Docket No.: 10546-US-PA

disclose each and every feature of the now-pending independent claim 1.

In particular, claim 1 teaches, among other things, "...*the first passivation layer has at least a recess, the whole recess has a sidewall and a bottom surface being exposed; the redistribution layer electrically connects with the bonding pad and extends from the bonding pad to the recess, and in contact with the sidewall and the bottom surface of the recess...*". The recess of the claimed invention, which has a pronounced deepness as shown in Figure 2, is intentionally introduced in the passivation layer, rather than a simple topographic non-planarity. The present invention further teaches the significance of having a recess configured in the first passivation layer which is to enhance the bonding between the bump and the redistribution layer. Contrary to the Office's assertion, Seta does not teach a recess in layer 11. The alleged recess Of Seta is simply a topographic non-planarity resulted from the deposition of layer 11 over the electrode pad 23. Seta has neither explicitly taught nor implicit suggest the first passivation having a recess or the advantages thereof.

Further, the present invention teaches a UBM layer in claims 8, 11-12. As a skilled artisan would realize that a UBM layer must include a plurality of layers, each of which serves a different purpose. Typically, a UBM layer includes an adhesion layer, a barrier layer, and a wetting layer, wherein the adhesion layer enhances the adhesion to the bonding pads, while the barrier layer mitigates the solid-solution reaction between the solder and the bonding pads. Seta, however, simply discloses a metal post 31, which is a single layer of copper for connecting the bonding pad and the bump. Accordingly, the metal post 31 of Seta can not be construed as comparable to the UBM layer of the instant case. The formation of a UBM layer over the

Customer No.: 31561  
Application No.: 10/709,953  
Docket No.: 10546-US-PA

second passivation layer can provide that mechanical advantage of stress absorption and buffering. Seto fails to teach a UBM layer disposed on the second passivation layer and the mechanical advantage thereof.

For at least the foregoing reasons, Applicant submits that the rejections to claims 1-3, 8-12, 16-20 have been traversed, rendered moot, and/or accommodated, and that the pending claims 1-3, 8-12, 16-20 are in condition for allowance. Reconsideration and withdrawal of these rejections are respectively requested

Customer No.: 31561  
Application No.: 10/709,953  
Docket No.: 10546-US-PA

### CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-3, 8-12, and 16-20 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Date :

Oct. 31, 2006

Respectfully submitted,

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